SOCIETIES AND ACADEMIES.

LONDON.

Linnean Society, November 30.—Sir David Prain, president, in the chair.—J. **Small**: The floral anatomy of some Compositæ. The vascular supply of various bilabiate or ray-florets was discussed, and it was shown that in these the vascular supply varies more or less with the size of the anterior lip of the corolla. The floral anatomy of *Senecio vulgaris* was described in detail. The corolla in the Cichorieæ has a very constant type of vascular supply, similar to Senecio, but with the posterior upper peripheral bundle dividing into three to supply the edges of the ligule and the posterior stamen. *Taraxacum officinale* is described in detail. The ray-florets of *Calendula officinalis* and *Tussilago Farfara* show a very simple type of anatomy. The peculiar homogeneousness within itself of the Cichorieæ and its isolation from the rest of the Compositæ are extended to the floral anatomy.—J. **Small**: Wind dispersal apparatus. The purpose of the apparatus is to determine the exact velocity of the wind required to blow the fruits of the Compositæ a sufficient distance to secure proper dispersal. It has been found that the following minimum winds are necessary for the dispersal of the fruits of the species named below:—*Senecio vulgaris*—1·6 m.p.h. = a light air; *Senecio vulgaris*, var. *radiatus erectus*—1·89 m.p.h. = a light breeze; *Ursinia speciosa*—2·6 to 2·94 m.p.h. = a light to gentle breeze; *Taraxacum officinale*—1·5 m.p.h. = a light air; *Tussilago Farfara*—0·62 to 0·65 m.p.h. = less than a light air; *Centaurea imperialis*—7·7 m.p.h. = a moderate breeze; *Leontopodium alpinum*—4·78 m.p.h. = a gentle breeze.—T. A. **Dymes**: A note on the seed of *Iris Pseudacorus*, Linn. There are two forms of seed in each capsule:—(1) Flat seeds in the straight portion; (2) more or less rounded seeds at the curved top and bottom of the capsule. The seeds drop or are blown from the placenta after the capsule dehisces. They lie over until the late spring. Those that fall on to the mud and remain there appear to perish from decay. The loose, light testa enables the seeds to float for a period of at least four months. Seeds that have not sunk germinate on or near the surface of the water in the latter half of May. The flat seeds germinate before the rounded. The cotyledon remains within the endosperm. The radicle elongates and branches freely; it does not curve downwards, but grows along the surface of the water. Adventitious roots are formed close up against the seed, and they also branch freely. The unbranched upper portion of the radicle secretes chlorophyll. The plumule grows slowly; it, too, lies along the surface of the water. When the root system is well developed the leaves begin to curve upwards and the seedling gradually assumes a vertical position, after which the leaves grow much more rapidly. The fate of those seeds, if any, that sink before germination has not yet been determined. The dispersal agents are, in the first instance, the wind, and afterwards water. Even on a slow stream the seeds may drift many miles during the four months of the floating period.

Aristotelian Society, December 4.—Dr. H. Wildon Carr, president, in the chair.—Dr. B. **Bosanquet**: The function of the State in promoting the unity of mankind. The essence of the Greek and German theory of the State has been mistaken by recent critics, although it has been rightly explained by English thinkers. The so-called absolutism of the State is merely a caricature of the unique relation between a man and the community with which his will is united, especially in so far as it provides an adjustment of all practical relations. Essentially, according to the theory, as having the same task in different territories, States are co-operative. Their function is the organisation of rights. The State, then, is a moral being with a conscience, and when its conscience is perverted it will fight for the wrong as its right. It is true that the moral position of the State is not comparable to that of a private individual, and this view is described as absolutism from unintelligence of what constitutes a moral situation and duty. As to wider loyalties and units than that of the nation-State, there *is* no being like the "humanity" of the Comtists, and humanity as a quality belongs chiefly to exceptional communities. Wider communities than the nation-State may be possible, but only if they fulfil the same condition of unity—namely, a general will. Without this, all leagues, federations, etc., are mere force and dangerous, and with it, scarcely necessary. The true outlook for peace is to the removal of causes of discontent by organisation at home, especially by freedom of human intercourse and absence of privilege. World-wide human relations are no reason for world-wide political units. A system of States, each well organised at home, might be just as peaceful as, and much more valuable than, a world-State.

PARIS.

Academy of Sciences, November 20.—M. Camille Jordan in the chair.—C. **Richet**: The alternating use of antiseptics. It has been shown by the author in earlier communications that micro-organisms can acquire immunity towards certain antiseptics, and this immunity can be transmitted. In the treatment of wounds by antiseptics this fact should be taken into account, and the conclusion is drawn that in the treatment of a wound the same antiseptic should never be used on two consecutive days.—P. **Vuillemin**: The supposed heterotaxy of nasturtium flowers.—E. **Borel**: The approximation of incommensurable numbers by rational numbers.—G. **Julia**: Some properties of the Fuchsian group formed from modular substitutions which do not change an indefinite Hermite form.—E. **Kogbetliantz**: Series of ultra-spherical functions.—G. **Koenigs**: Properties of the second order of plane movements with two parameters.—H. **Vergne**: A method of calculating perturbations of a known movement.—L. **Roy**: The problem of the wall in electrodynamics.—M. **Russo**: Geological notes on the region of Bou Laouane (western Morocco).—C. **Galaine** and C. **Houlbert**: The Hermelles reefs and the drying-up of the bay of Mont Saint-Michel.—G. **Lardennois** and J. **Baumel**: Gangrenous infection of wounds by anaerobic germs.—H. **Bierry**: The detection of tubercle bacilli in expectorations and various animal fluids. Isolation and detection of elastic fibres. The technique for sputa consists in the addition of very dilute alkali and sodium hypochlorite at 35°–40° C. The liquid is just rendered acid with acetic acid, and the resulting precipitate, which contains the tubercle bacilli and elastic fibres, separated by the centrifuge. Details are given of the modifications suitable for the examination of blood, pleural secretions, and cephalo-rachidian fluid.

BOOKS RECEIVED.

Opere Matematiche. By L. Cremona. Tomo iii. Pp. xxii+520. (Milano: U. Hoepli.) 30 lire.

A Bibliography of British Ornithology. By W. H. Mullens and H. Kirke Swann. Part iv. (London: Macmillan and Co., Ltd.) 6*s*. net.

The Earliest Voyages Round the World, 1519–1617. Edited by P. F. Alexander. Pp. xxiii+216. (Cambridge: At the University Press.) 3*s*. net.

The Scientist's Reference Book and Diary, 1917. Pp. 134+Memoranda. (Manchester: J. Woolley, Sons, and Co., Ltd.) 2*s*. 6*d*.

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The Standard Cyclopedia of Horticulture. By L. H. Bailey. Vol. v. Pp. 2423–3041. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 25*s.* net.

Mechanisms of Character Formation. By Dr. W. A. White. Pp. 342. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 7*s.* 6*d.* net.

Morphology of Invertebrate Types. By Dr. A. Petrunkevitch. Pp. xiii+263. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 6*s.* net.

A Text-Book of Botany for Colleges. By Dr. W. F. Ganong. Pp. xi+401. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 8*s.* 6*d.* net.

The Supervision of Arithmetic. By W. A. Jessup and L. D. Coffman. Pp. vii+219. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 5*s.* net.

The Fundamentals of Psychology. By Prof. W. B. Pillsbury. Pp. ix+562. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 8*s.* 6*d.* net.

Elementary Qualitative Analysis. By Dr. B. Dales and Dr. O. L. Barneley. Pp. vii+205. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 5*s.* 6*d.* net.

A Handbook for Cane-Sugar Manufacturers and their Chemists. By Dr. G. L. Spencer. Fifth edition. Pp. xv+529. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 15*s.* net.

A Manual of Fire Prevention and Fire Protection for Hospitals. By Dr. O. R. Eichel. Pp. v+69. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 4*s.* 6*d.* net.

David Gill, Man and Astronomer. Memories of Sir David Gill, K.C.B. Collected and arranged by G. Forbes. Pp. xi+418. (London: J. Murray.) 12*s.* net.

Aérodonétique. By F. W. Lanchester. Translated by Commandant C. Benoit. Pp. xvii+478. (Paris: Gauthier-Villars et Cie.) 14 francs.

Intégrales de Lebesgue, Fonctions d'Ensemble, Classes de Baire. By Prof. V. Poussin. Pp. viii+154. (Paris: Gauthier-Villars et Cie.) 7 francs.

Poverty and its Vicious Circles. By Dr. J. B. Hurry. Pp. xiv+180. (London: J. and A. Churchill.) 5*s.* net.

DIARY OF SOCIETIES.

THURSDAY, DECEMBER 14.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Colonial Telegraphs and Telephones: R. W. Weightman.

MATHEMATICAL SOCIETY at 5.30.—Orbits Asymptotic to an Isosceles Triangle Solution of the Problem of Three Bodies: Prof. D. Buchanan.—Diffraction of Waves by a Wedge of any Angle: Prof. H. S. Carslaw.—(1) Proof that almost all numbers n are composed of about log log n prime factors; (2) An Asymptotic Formula for the Number of Partitions of a Number: G. H. Hardy and S. Ramanujàr.—Two Theorems of Combinatory Analysis and Two Allied Identities: Prof. L. J. Rogers.—The Harmonic Functions associated with the Parabolic Cylinder (second paper): C. N. Watson.—(1) The Internal Structure of a Set of Points in Space of any Number of Dimensions; (2) The Inherently Crystalline Structure of a Function of any Number of Variables: Prof. W. H. Young and Mrs. Young.—The Efficiency of a Surface of Pressure Discontinuity regarded as a Propeller: Prof. W. Burnside.

ROYAL GEOGRAPHICAL SOCIETY, at 5.—(*Discussion*): British and Metric Measures in Geographical Work: opened by the Secretary.

OPTICAL SOCIETY, at 8.—The Refractometry and Identification of Glass Specimens—especially Lenses: L. C. Martin.—A Workshop Method of Determining the Refractive Index of a Piece of Glass having one Flat Surface: Dr. R. S. Clay.

ROYAL SOCIETY OF ARTS, at 4.30.—The World's Cotton Supply and India's Share in it: Prof. J. A. Todd.

LINNEAN SOCIETY, at 5.—Observation on the Root System of *Impatiens Roylei*, Walp.: Miss Isabel McClatchie.—The Teeth of some Palæozoic Sharks: Dr. A. Smith Woodward.—Sex Distribution in *Myrica gale*, Linn.; Miss A. J. Davey and Miss M. Gibson.

FRIDAY, DECEMBER 15.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—Variable-speed Gears for Motor Road-vehicles: R. E. Phillips.

ILLUMINATING ENGINEERING SOCIETY, at 5.—Suggestions regarding War Economies in Lighting: L. Gaster.

MONDAY, DECEMBER 18.

ARISTOTELIAN SOCIETY, at 8.—The Organisation of Thought: Prof. A. N. Whitehead.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—New Caledonia and the Isle of Pines: R. H. Compton.

FARADAY SOCIETY, at 8.—A Precision Method of Uniting Optical Glass—the Union of Glass in Optical Contact by Heat Treatment: R. G. Parker and A. J. Dalladay.—The Effect of Pressure on the Equilibrium Constant of a Reaction in a Dilute Solution. A Simple Proof of the Expression: Dr. W. C. McC. Lewis.—Do Equiatomic Solutions in Iron possess Equal Resistances? E. D. Campbell.—Grain Growth in Deformed and Annealed Low Carbon Steel: R. H. Sherry.

TUESDAY, DECEMBER 19.

ROYAL STATISTICAL SOCIETY, at 5.15.—The Reorganisation of Official Statistics and a Central Statistical Office: G. Drage.

INSTITUTION OF CIVIL ENGINEERS, at 5.30.—Further discussion:—Experiments on Earth-pressures: P. M. Crosthwaite.

INSTITUTION OF PETROLEUM TECHNOLOGISTS, at 8.—Notes on the Subject of Geological Mapping: S. Lister James.

WEDNESDAY, DECEMBER 20.

ROYAL METEOROLOGICAL SOCIETY, at 5.—The Measurement of Rainfall Duration: C. Salter.—Discontinuities in Meteorological Phenomena. III.: Prof. H. H. Turner.

ROYAL MICROSCOPICAL SOCIETY, at 7.—Certain Sessile Forms of Foraminifera: Prof. S. J. Hickson.—Note on the Relation between the Hatching and Development of the Larvæ of the Yellow Fever Mosquito, *Stegomyia fasciata*, and the Presence of Bacteria and Yeasts: A. Bacot.

GEOLOGICAL SOCIETY, at 5.30.

ROYAL SOCIETY OF ARTS, at 4.—Classical and Scientific Education: A. C. Benson.

THURSDAY, DECEMBER 21.

CHEMICAL SOCIETY, at 8.—Studies on the Walden Inversion. V. The Kinetics and Dissociation Constant of α-Bromo-β-phenylpropionic Acid: G. Senter and G. H. Martin.—The Alcohols of the Hydroaromatic and Terpene Series. III. The Isopulegols corresponding with *l*-Menthol and *d*-Neomenthol: R. H Pickard, W. Lewcock, and H. de Pennington.—Lead Sub-iodide with Details of the Preparation of Lead Suboxide: H. G. Denham.—Note on the Solubility of Lead Iodide: H. G. Denham.—Chromium Phosphate: A. F. Joseph and W. N. Rae.

INSTITUTION OF MINING AND METALLURGY, at 5.30.—The Economic Geology of the Insizwa Range: W. N. Goodchild.

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